

MEDICAL EQUIPMENT RENTAL SYSTEM FOR SUPPORTING EFFICIENT AND
INEXPENSIVE MEDICAL EXAMINATIONS

This application claims benefit of Japanese Application No.2003-158461 filed in Japan on June 3, 2003, the contents of which are incorporated by this reference.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention relates to a medical equipment rental system for renting medical equipment to medical organisations on a fee-paying basis.

2. Description of the Related Art

In recent years, examinations and consultations using endoscopes have become widely used, regardless of the size of the hospital involved. By means of endoscopic examination, an affected area inside a patient's body cavity can be observed by a non-invasive method and a biopsy can readily be taken of a region of body tissue giving cause for concern, and hence this type of examination plays a very important role at both the stages of initial diagnosis and definitive diagnosis.

OBJECTS AND SUMMARY OF THE INVENTION

It is an object of the present invention to provide a medical equipment rental system which enables medical equipment requested by a rentee system to be rented out to

that rentee system by means of a rental service system, on a fee-paying basis, and which is able to support efficient and inexpensive medical examinations.

The medical equipment rental system according to the present invention comprises: a rentee system having: an examination category input section for inputting a category of a medical examination on the basis of diagnosis results; an examination date and time specifying section for specifying an examination date and time for the medical examination; and a rental order generating section for generating an order for rental of medical equipment required in the medical examination at the date and time specified by the examination date and time specifying section; and a rental service system having: a medical equipment securing section for securing the medical equipment required in accordance with an order generated by the rental order generating section; a medical equipment dispatching section for dispatching the medical equipment secured by the equipment securing section, to the requesting hospital, at the date and time specified by the examination date and time specifying section; and a reprocessing section for recovering the medical equipment after rental has terminated and reprocessing the medical equipment.

Other features and advantages of the present invention will become sufficiently apparent from the following description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 to Fig. 7 relate to a first embodiment of the present invention, wherein

Fig. 1 is a diagram showing the composition of a medical equipment rental system;

Fig. 2 is a diagram showing the composition of the hospital and the medical equipment rental center illustrated in Fig. 1;

Fig. 3 is a first diagram for describing the action of the medical equipment rental system illustrated in Fig. 1;

Fig. 4 is a second diagram for describing the action of the medical equipment rental system illustrated in Fig. 1;

Fig. 5 is a third diagram for describing the action of the medical equipment rental system illustrated in Fig. 1;

Fig. 6 is a fourth diagram for describing the action of the medical equipment rental system illustrated in Fig. 1; and

Fig. 7 is a fifth diagram for describing the action of the medical equipment rental system illustrated in Fig. 1.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

First Embodiment

As shown in Fig. 1, the medical equipment rental system 1 according to the present embodiment comprises a plurality of hospitals 2, and a medical equipment rental center 3 run by a rental operator who has concluded medical equipment rental

agreements with these hospitals 2, the hospitals 2 and the medical equipment rental center 3 being connected by means of a communications line 4. In the present embodiment, the rental of medical equipment is described below by taking an endoscope device as an example. A rentee system is provided in each hospital 2 and a rental service system is provided in the medical equipment rental center 3.

As shown in Fig. 2, a hospital 2 (or rather, the rentee system provided therein,) is provided with: a reception area terminal 21 for inputting information relating to a patient that has arrived at the hospital and the condition of that patient, and indicating the relevant consultation department to the patient; a consulting room terminal 22, disposed inside a consulting room of the relevant department, for receiving information about the patient and information about the patient's condition from the reception area terminal 21 and creating electronic patient records after the consultation; and an examination room terminal 23, disposed in an examination room where required endoscopic examination is carried out on a patient who has completed a consultation, for transmitting an examination schedule and examination results to a reception area terminal 21.

On the other hand, the medical equipment rental center 3 (or rather, the rental service system provided therein,) comprises: a reception terminal 31 for receiving requests from a reception area terminal 21 in a hospital 2, via the

communications line 4, and managing the dispatch and return delivery of rented endoscope devices; a stock room terminal 32 for managing the stock of endoscope devices available for rental; and a reprocessing room terminal 33 for managing the reprocessing of endoscope devices that have been recovered after rental.

According to this composition, when a hospital 2 (or rather, the rentee system provided therein) makes a request to rent an endoscope device, the medical equipment rental center 3 (or rather, the rental service system provided therein) dispatches an endoscope device of the kind required by the hospital from a stock room 34, at the specified date and time, recovers the endoscope device from the examination room of the hospital 2 after examination, and cleans and sterilises the endoscope device that has been rented out, in a reprocessing room 35, before subsequently storing it in the stock room 34.

The detailed action of the present embodiment is described below.

As illustrated in Fig. 3, when a patient arrives at a hospital 2, at step S1, information about the patient and information about the patient's condition are input to the reception area terminal 2, and at step S2, a consultation department that corresponds to the patient's particular condition is designated to the patient. At step S3, the information about the patient and the information about the patient's condition are sent by the reception area terminal 2

to the consulting room terminal 22 of the designated consultation department. With this, the reception procedure for the patient is completed.

In the consulting room of the designated consultation department, as shown in Fig. 4, at step S11, information about the patient and information about the patient's condition are received from the reception area terminal 2 by the consulting room terminal 22, and a consultation and diagnosis of the patient's condition are carried out. Thereupon, at step S12, the patient is informed whether or not he or she requires an endoscopic examination (detailed examination), and is also told the doctor's opinions (the results of the diagnosis), whereupon at step S13, the details of the diagnosis, and the endoscopic examination (detailed examination) category, and the like, are entered into an electronic patient record in the consulting room terminal 22, thereby creating an electronic patient record, which is sent to the reception area terminal 2 at step S14, whereby the consultation procedure for the patient is completed.

When the consultation has finished, the reception area terminal 2 receives the electronic patient record from the consulting room terminal 22 at step S21, as illustrated in Fig. 5, and at step S22, it is decided whether or not an endoscopic examination (detailed examination) is required. If an endoscopic examination (detailed examination) is required, then at step S23, the desired date of the examination for that

patient is input, and at step S24, an examination room is reserved on the examination room terminal 23, in addition to which, at step S25, the materials and instruments required in the examination are confirmed. By means of this processing, it is possible to confirm the days on which examination is possible, and the materials and instruments required for the examination.

At step S26, a request for the materials and instruments required in the examination is made to the reception terminal 31 of the medical equipment rental center 3, by means of the communications line 4, and when a rental reservation has been confirmed by the reception terminal 31 of the medical equipment rental center 3 at step S27, then at step S28 the examination date is established. Thereupon, at step S29, a prescription, or the like, is issued to the patient, and at step S30, the patient is charged the consultation fee. If there is no requirement for an endoscopic examination (detailed examination), then the sequence proceeds from step S22 to step S29. Thereby, the discharge procedure for the patient is completed.

In the medical equipment rental center 3, on the other hand, as illustrated in Fig. 6, if a request for rental of materials and instruments is received from the reception area terminal 21 of the hospital 2 by means of the communications line 4 at step S41, then at step S42 dispatch schedule information is obtained from the stock room terminal 32, and

at step S43, a rental reservation completed message is sent to the reception area terminal 21 of the hospital 2.

Here, it is also possible to make reservations in respect of a request for rental of materials and instruments from the reception area terminal 21 of the hospital 2, by means of the hospital making detailed specifications regarding the materials and instruments required, but it is also possible to receive reservations on the basis of an examination category correspondence table as illustrated in Table 1, by receiving the examination category from the hospital.

(Table 1)

Category of Examination	Type of endoscope used	Peripheral equipment	Accessories
Endoscopic examination of upper digestive tract	GIF type scope	GIF peripheral set	GIF forceps set
Endoscopic examination of lower digestive tract	CF type scope	CF peripheral set	CF forceps set
Endoscopic examination of bronchus	BF type scope	BF peripheral set	BF forceps set
Endoscopic examination of biliary tract	JF type scope	JF peripheral set	JF forceps set
Endoscopic examination of lower digestive tract (Long)	CF type scope	CF peripheral set	CF forceps set
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Furthermore, in the medical equipment rental center 3, as illustrated in Fig. 7, when a rental has finished and the reception terminal 31 has confirmed the return of the materials and instruments that was rented out, at step S51, it then sends a request for reprocessing of the returned materials and instruments, to the reprocessing room terminal 23, at step S52. Thereupon, at step S53, it receives a reprocessing completion schedule from the reprocessing room terminal 23, and the materials and instruments are then transported to the reprocessing room 35. When reprocessing of the materials and instruments has been completed, at step S54, the reprocessing completed information is updated, and the materials and instruments that have completed reprocessing are conveyed to the stock room 34, where, at step S55, stock information is obtained from the stock room terminal 32 and the stock information is updated accordingly.

In this way, in the present embodiment, it is possible to provide medical equipment required by a hospital, on the date and time that it is required, and since the hospital does not need to carry out reprocessing of the equipment, then it is possible to support medical examinations that are efficient and inexpensive to run.

In this invention, it is obviously possible to compose various different modes of implementation covering a broad range of applications, on the basis of the present invention, without departing from the spirit or scope of the invention.

This invention is limited by the accompanying claims, but apart from this, it is not limited by the specific embodiments described herein.